

III. SURFACE WATER ASSESSMENT

B. Plan for Achieving Comprehensive Assessments

EPA has established a long-term goal of comprehensively characterizing waters of each state using a variety of techniques targeted to the condition of, and goals for, the waters. Achieving this goal will mean a significant increase in the percentage of waters assessed throughout the Nation. To help ensure national progress toward this goal, States have been asked to include in the 305(b) Report an outline of a plan showing how they will achieve comprehensive monitoring and assessment of its waters.

The Department of Environmental Management's Office of Water Resources (OWR) has committed to the development of a watershed approach that will ultimately guide OWR with respect to future work to abate surface water pollution. However, a 1997 OWR assessment of state water resource protection programs identified gaps in baseline monitoring, inadequate data management and limitations in the assessment program as significant deficiencies which prevent the effective statewide application of the watershed-based approach and achievement of comprehensive assessments. Emerging issues such as the cumulative effect of nonpoint pollution sources, habitat degradation, and TMDL development could not be properly addressed without an adequate ambient monitoring and assessment framework that includes an effective data management system.

In working towards Comprehensive Assessment, OWR, with EPA support, has committed to begin addressing data gaps through an update and revision of its overall monitoring strategy. OWR is committed to developing a monitoring strategy that will provide a framework for eliminating significant geographic gaps in data and insuring adequate coverage of parameters of concern. This framework will reflect the partnerships and collaborations that occur among state, local and federal agencies, universities and colleges, other organizations and volunteers regarding monitoring activities. Additional resources will be required to implement a comprehensive monitoring program that meets the needs of water resource managers.

Preliminary steps taken toward addressing data gaps have included establishment of longer term contracts with groups involved in conducting baseline monitoring to ensure collection of continuous data sets. Furthermore, funds have been reserved to expand and supplement these contracts as additional monitoring sites and parameters are identified.

Recent data management improvements have substantially facilitated the 305(b) assessment process and allowed for easier identification of ambient monitoring gaps and improved assessment and mapping capabilities. OWR has identified data gaps through an evaluation of the enhanced 2002 water quality assessments. Refinement of total waters values has led to more accurate estimates of unassessed waters. Indexing of the waterbodies to GIS now allows for an easy listing and mapping of waters within the database which are completely unassessed or unassessed for various uses. The databases and mapping capabilities have also been useful in identifying areas where monitoring for various parameters (toxics, organics, pathogens, etc.) is lacking. Other areas which will be scrutinized for improved monitoring needs are the evaluated assessments. These assessments are based on either old or minimal data or on up- or down-stream monitoring information.

With this new geographical picture of unassessed and evaluated waters, the OWR is able to review the spatial extent of monitoring needs with respect to 303(d) and TMDL listed waters,

and baseline monitoring statewide. It is anticipated that several types of monitoring designs including the traditional targeted monitoring and probability-based (random) designs, will be employed by OWR to address the data gaps. The OWR feels it is important to maintain a baseline level of data collected statewide and therefore, the baseline monitoring program will be continued. The OWR has begun to assess the expansion of this baseline program to collect biological and chemical data at some of the unassessed and evaluated waters as sites are defined through this comprehensive assessment process. This type of targeted monitoring will also be evaluated for use in addressing the monitoring needs of the 303(d) and TMDL listed waters.

The use of a probability-based monitoring program has recently been utilized to define sampling locations for a summer 2000 biological and chemical monitoring effort on wadable streams. Fifty river sites were randomly selected around the state. Forty-eight stations were sampled once during the study period for water chemistry, macroinvertebrates, and fish population. The use of probabilistic sampling may be applied on a smaller scale (watershed) to address currently unassessed waters.

Lake monitoring within Rhode Island is conducted solely by URI's Watershed Watch Volunteer monitoring program and it is for this reason a large portion of Rhode Island's lake acres are considered assessed. Since 1999, OWR has established a long term agreement with the Watershed Watch Program at URI to support continuation this work. An attempt to monitor lakes 20 acres and greater is now part of OWR's Monitoring Strategy for lakes. The agreement with URI calls for the additional monitoring of 5-10 lakes per year.

Due to the shellfishing resource, DEM/OWR collects an extensive amount of bacteriological data from the bay and coastal ponds. A gap in this data exists where there are permanent shellfish closures. In the upper bay a recent joint initiative by OWR and the Narragansett Bay Commission has been undertaken to address this gap in order to provide better information to the decision-making process on CSOs.

Through the Narragansett Bay Estuarine Program a significant amount of water quality data on the Bay was generated. However, this effort was not followed up by a continuous monitoring program for Narragansett Bay and much of the data is now at least 10 years old. DEM/OWR has concerns about dissolved oxygen and impacts of nutrients in coastal waters and has implemented monitoring toward TMDL development for several sites. Since 1998, a multi-partner Bay-wide monitoring system has been underway. The Narragansett Bay Estuarine Program has aided in the technical planning and design of this continuous monitoring system for all of Narragansett Bay. A technical steering committee oversees the project development.

In addition to the continuous monitoring program for Narragansett Bay, a voluntary effort was organized during the summers of 1999, 2000, 2001 to measure overnight decreases in dissolved oxygen across the entire upper half of Narragansett Bay. The continuation of this multi-state, multi-institution effort is dependent on the availability of agency boats, in addition to funding and staff resources.

Unlike other northeast states, Rhode Island has not supported a routine surveillance program for fish tissue analyses. In the spring of 1997, RI initiated a small monitoring program to measure mercury levels in fish. This monitoring has been limited since its initiation. Only a small number of waterbodies and fish have been tested for contamination. Currently, EPA, RI Department of Health and RIDEM are in the planning phase to develop an outline of a fish tissue monitoring program for the state. Finalization of the outline will produce a program that could be subject to future implementation if resources are secured.